(iv) There has been progressive increase in use of Tie Tamping and ballast cleaning machines for track maintenance, (v) For monitoring track geometry and running characteristics of the track, sophisticated track recording cars, oscillograph cars and portable accelerometers are being progressively used.

(vi) Maintenance facilities for coaches and wagons have been modernised and upgraded at many depots.

(vii) To prevent cases of cold breakage of axles, Routine Over Hauling Depots have been equipped with ultrasonic testing equipment for detection of flaws in the axles.

(viii) Whistle boards-speed breakers and road signs have been provided at unmanned level crossings and visibility for drivers has been improved.

(ix) Steps have been taken to prevent inflammable and explosive materials from being carried in passenger trains.

(x) Training facilities for drivers, guards and staff connected with train operation have been modernised including use of Simulators for training of drivers.

(xi) Walkie-Talkie sets have been supplied to Drivers and Guards on all trains.

Rail Accidents in Maharashtra

2289. SHRI SURYABHAN PATIL VAHADANE: Will the Minister of RAILWAYS be pleased to state:

(a) the number of rail accidents which took place from 1997, till date, in Maharashtra;

(b) what were the cause of each such accident; and

(c) what preventive measures have been taken by Government to curb recurrence of such accidents?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS (SHRI DIGVIJAY SINGH): (a) The Railway accidents statistics are maintained Railway Zone-wise and not State-wise. Maharashtra State is covered by parts of Central Railway, South Central Railway, South Eastern Railway, Western Railway and

Konkan Railway. The number of consequential accidents which occurred on these Railways are as follows:—

Railway	1997-98	1998-99	1999-2000	2000-01 upto July, 2000
Central Railway	65	68	68	18
South Central Railway	37	45	49	14
South Eastern Railway	63	55	52	17
Western Railway	42	26	30	12
Konkan Railway	3	9	4	2

(b) The cause-wise details of the above accidents are as given below:—
(A = Central Railway, B = South Central Railway, C = South Eastern Railway, D = Western Railway and E = Konkan Railway)

Cause		1997-98	1998-99	1999-2000	2000-01 upto July, 2000*
Failure of Railway Staff	A	52	42	42	11
	B	24	30	27	5
	C	41	36	40	12
	D	26	18	21	7
	E	—	1	1	—
Failure of Other than Railway Staff	A	2	4	16	3
B	8	10	14	6	
	C	13	12	8	2
	D	9	7	9	1
Failure of Material/ Equipment	E	7	15	7	1
	A				
	B	3	3	4	—

Cause		1997-98	1998-99	1999-2000	2000-01 upto July, 2000*
	C	7	1	1	—
	D	4			
	E	—	2	—	—
Sabotage	A	3	3	—	1
	B		2		
	C	1	2	2	1
	D				
Combination of	E	—	—	—	—
	A				
Factors	B	1	—	—	—
	C				
Incidential	D	—	3	3	1
	E			1	
	A				
	B				
	C	1	2		1
	D	1	—	—	1
	E	3	6	3	1
Not Established	A	1	1	—	1
	B	1	—	3	—
	C	—	2	1	—
	D	2	1	—	1
	E				
Under Investigation	A	—	—	—	2
	B				2
	C				1
	D				2
	E	—	—	—	1
Total	A	65	68	68	18
	B	37	45	49	14
	C	63	55	52	17
	D	42	26	30	12
	E	3	9	4	2

* Figures in this column are provisional.

(c) Following is a list of the important steps being taken to prevent accidents:—

(i) The work of track circuiting has been accelerated on the trunk routes and other important main lines. Track circuiting from Fouling Mark to Fouling Mark has been completed on A, B, C, D Special and D routes of Indian Railways.

(ii) Modification of the signalling circuitry is being carried out to minimise chances of human error in causing accidents.

(iii) Auxiliary Warning System for giving advance warning about 'Signal at danger' to the driver of the running train has been commissioned on Mumbai suburban sections.

(iv) Walkie-Talkie sets have been supplied to Drivers and Guards on all trains.

(v) There has been progressive increase in use of Tie Tamping and ballast cleaning machines for track maintenance.

(vi) For monitoring track geometry and running characteristics of the track, sophisticated track recording cars, oscillograph cars and portable accelerometers are being progressively used.

(vii) For detecting rail fractures and weld failures, *96* more double rail Ultra Sonic Flaw Detectors are being procured.

(viii) Maintenance facilities for coaches and wagons have been modernised and upgraded at many depots.

(ix) To prevent cases of cold breakage of axles, Routine Over Hauling Depots have been equipped with ultrasonic testing equipment for detection of flaws in the axles.

(x) Whistle boards/speed breakers' and road signs have been provided at unmanned level crossings and visibility for drivers has been improved.

(xi) Audio-visual publicity campaigns to educate road users on how to make a safe crossing are conducted.

(xii) Steps have been taken to prevent inflammable and explosive materials from being carried in passenger trains.

(xiii) Periodic Safety Audit of different divisions by interdisciplinary teams from zonal headquarters has been introduced.

(xiv) Training facilities for drivers, guards and staff connected with train operation have been modernised including use *of* Simulators for training of drivers.

(xv) Refresher courses are regularly organised at specified intervals.

(xvi) Performance of the staff connected with train operation is being constantly monitored and those found deficient are sent for crash training.

(xvii) Periodical safety drives are conducted to inculcate safety consciousness among the staff.

Gauge Conversion work on Kollam-Virudnagar Rail Line

† 2290. SHRI N.K. PREMACHANDRAN: Will the Minister of RAILWAYS be pleased to state:

(a) the stage at which the conversion of metre gauge of Kollam (Quilon)-Virudnagar rail line into broad gauge stands at present;

(b) whether the conversion work has been commenced;

(c) if so, the details thereof; and

(d) by when the work relating to the aforesaid broad gauge conversion is likely to be completed?

THE MINISTER OF STATE IN THE MINISTRY OF RAILWAYS (SHRI DIGVIJAY SINGH): (a) to (c) Final Location Survey has been taken up on the Ghat section between Tenkasi and Punalur with the object of easing sharp curves and providing flatter gradients. Work has been started on earthwork and bridges on Virudhunagar-Tenkasi section.

(d) No target date has yet been fixed.

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† Original notice of the Question was received in Hindi.